INORGANIC MERCURY POISONING DUE TO THE USE OF BEAUTY CREAM IN HONG KONG

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INTRODUCTION: Use of inorganic mercury compounds in cosmetic products is prohibited as it can cause significant nephrotoxicity. However, the public continues to have access to these illegal products in Hong Kong.

MATERIAL AND METHODS: This is a retrospective study aiming to evaluate the clinical characteristics and the treatment outcome of inorganic mercury poisoning due to the use of beauty cream. Cases were identified using the electronic system of the Hong Kong Poison Information Centre from 2008-2015. Only those with proven inorganic mercury poisoning and prior use of beauty cream were included.

RESULTS: 17 patients were included in the analysis. 88.2% were female and more than half of those were Indonesian. Most of the patients were treated with dimercaptosuccinic acid chelation, prednisolone or combination therapy. Baseline 24-hour urine mercury levels correlate with the severity of proteinuria (Pearson's correlation 0.587, p=0.035). Compared to chelation therapy alone, combination therapy with prednisolone demonstrated statistical significant reduction in urine protein levels (99.41±0.11vs. 98.73±0.19; p=0.015).

CONCLUSIONS: Inorganic mercury poisoning due to the use of beauty cream causes minimal change disease, resulting in nephrotic syndrome. Baseline 24-hour urine mercury level correlates with the severity of proteinuria. Statistical significant reduction in proteinuria was found in patients receiving combination therapy with dimercaptosuccinic acid and prednisolone.

Table 1. Baseline characteristics of the patients according to different treatment regimens

	No DMSA and Prednisolone	DMSA only	Prednisolone only	Prednisolone + DMSA
N	3	3	2	7
Age	47 (33-64)	32 (23-38)	39 (18)	29 (22-57)
Female (%)	3 (66.7%)	5 (100%)	1 (50%)	7 (100%)
Cumulative dose of DMSA (mg)	N/A	15004±1.5	N/A	23976±1.4
Cumulative dose of Prednisolone (mg)	N/A	N/A	2874±3.0	1627±3.4
Spot blood mercury level (nmol/L)	80.2±9.4	103.8±3.9	80.6±1.7	49.6±1.4
24 hour urine mercury level (nmol/day)	24.3±1.9	514.9±3.1	127.2±12.0	204.2±2.9
24 hour urine protein level (g/day)	3.69±1.61	7.70±1.65	7.86±1.45	10.53±1.29